

Dairy Split Session I

Dairy Herd Performance Evaluation

Leon Weaver, *Presiding*

Performance Evaluation as an Integral Part of Dairy Health Programs

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The practice of veterinary medicine in the livestock industry is entering a third phase. The first phase, individual animal crisis care, gave way in the past two decades to scheduled herd health preventive medicine concepts and programs. In dairy operations, herd health has focused on disease prevention through sanitation, vaccination and proper use of facilities. Mastitis programs have urged correct milking practices, teat dipping, dry cow therapy and selective culling. Pregnancy and infertility examinations have often been the nucleus of dairy herd health programs, consuming the bulk of professional time. The strong association between disease control programs and enhanced profitability for the dairy enterprise has fostered a close association of producers and veterinarians. In their efforts to reduce disease to the lowest economically feasible levels, both are becoming sophisticated in benefit/cost analysis. Veterinarians have increasingly become a part of the management team, in contrast to the emergency care concepts of the past. Next to the owner himself, the herd veterinarian is often the management person most intimately familiar with the dairy, its problems and possibilities.

Just as "Herd Health" was a new concept 20 years ago, Production Medicine is for the future. Those actively engaged in herd health procedure for any length of time have rapidly discovered the limitations resulting from too narrow a focus on disease diagnosis, treatment and prevention. Frequently, potential gains achieved through improved disease control are often negated by improper management or feeding practices. To realize benefits from improved health, other limiting factors must be identified and removed. Heifers must be raised economically, calve at the optimum age and weight, and improve the herd genetic base. Diseases of mastitis and reproduction must be controlled, nutrition must be optimal and utilization of economic and human resources must be maximized.

Dairying in the current economic climate requires

knowledge of efficient management methods, expenditure control and high levels of milk production. Dairymen are seeking and retaining consultants qualified to assist them in these areas. The herd veterinarian by virtue of his professional training, knowledge of efficient dairy practices, trusted relationship and familiarity with management may be the most appropriate choice as a dairy health and production control consultant.

A change in orientation for both the producer and veterinarian is necessary to engage in a Health, Production and Expenditure Control Program. Fundamental to this change are objectives much more broadly defined than health alone. Where herd health programs measure success with specific goals such as somatic cell count, calving interval, etc. the Production Medicine approach will measure milk production, genetic improvement, cash flow and return on investment. Production Medicine will require constant measurement of production indices, establishment of alarm levels, modification of management inputs to achieve goals and reevaluation to determine the effect of altered management. Unless computers are utilized, the Production Medicine approach will only be retrospective.

There are six major areas of interest in a Production Control Program:

1. Calf and Heifer Replacement Program
2. Udder Health/Milk Quality Control
3. Reproduction
4. Nutrition
5. General Herd Health/Sick Cow Care
6. Personnel Training and Management

Each of these focus areas must be evaluated for its effect upon herd milk production and profitability. To begin this process, a review of present production indices and management practices are necessary. At this review meeting, areas where performance can be improved are defined, and goals and methods selected. Protocols for problem investi-

gation can also be developed as necessary. Current herd health expenditures for supplies, pharmaceuticals, labor and services should be reviewed and justified, altered or eliminated. Involvement of other professionals (e.g., nutritionist, banker, CPA) is often desirable.

Herd performance reports are essential to production control programs. Monthly reports can utilize information extracted and summarized from manual records, DHIA, microcomputers and other sources. An example of a Monthly Herd Performance Report is presented in Table 1. Graphic depiction of data often facilitates communication (Figures 1, 2, 3). Program evaluations and modifications are prompted by monthly reports and are made on a continuing basis. Comprehensive reviews can be conducted less frequently. An agenda useful for a Herd Animal Review is presented in Table 2.

Any successful program requires planning and scheduling activities requisite to achievement of objectives. An activity planning checklist and schedule is presented in Table 3.

A major difficulty confronting the veterinarian and client wishing to be involved in a broad-based performance evaluation program is the determination of an appropriate fee arrangement. The traditional fee-for-service schedule is extremely cumbersome, because services are no longer neatly packaged as clinical cases and isolated visits. Instead, services are on a continuing basis with activities overlapping from one visit to the next. Furthermore, a broad range of services including clerical work, data processing and consultation are requisite to successful programs. A fee-for-service schedule offered on an *al a carte* basis could result in partial programs lacking the breadth necessary to achieve objectives.

A more useful fee arrangement might be an hourly rate basis. Many veterinarians involved in scheduled preventive practice utilize this arrangement. It is very successful for those aspects of the programs that are technical in nature, i.e., reproductive exams, milking machine evaluation, sick cow work and surgery. It is less functional when consultative services are required. Who decides how much investigative work should be done to determine the cause of and solutions to a management problem? How much time should be spent in consultation? Should time spent in research and preparation off premises be billed? Both client and veterinarian are well aware that the clock is running! Thus, the focus is on the cost of the service, not its potential return. This focus is reinforced when a bill is presented for each block of time rendered to the client. The hourly rate fee schedule all too often discourages the increased utilization of veterinary consultative services.

A retainer fee and service arrangement can provide a framework for delivery of consultative services. The retainer fee schedule is a contractually oriented agreement between the producer and consultant to receive certain specified services for a predetermined fee.

The retainer concept of practice utilizes very frequent dairy visits (once or twice weekly) of short duration (one to

three hours). A close, frequent and flexible association between the consultant and producing unit should facilitate development of recommendations that can improve profitability. This dairy visit schedule capitalizes upon several important characteristics of human behavior and dairy management:

1. Client education is facilitated when the consultant is not rushed and has time to teach while examining and treating animals. Learning is reinforced if teaching occurs on a repetitive basis.
2. Trust is inspired by a close association and can be reinforced by frequent interpersonal involvement.
3. Most problems are ultimately caused by people rather than disease. Conversely, most solutions are found in people rather than in pharmaceuticals. People problems are best discovered by a third-party observer who spends a good amount of time learning each employee's personality and job responsibilities.
4. It is less disruptive for most dairy labor forces if veterinary visits are of short duration and more frequent.
5. Implementation of new programs may create apprehension. Close supervision of personnel responsible for newly devised programs is essential to insure success.
6. Each owner is an individual with unique financial and philosophical goals. The consultant's understanding of owners objectives is facilitated by intensified involvement, and is essential.

Implementing a retainer program in an existing practice can present some risks to the veterinarian. Usually the practice schedule is full with reproductive visits and other work, leaving little time for extended involvement with a retainer client. The veterinarian faces the prospect of limiting his clientele, perhaps by discontinuation of service to certain clients or aspects of practice, or the addition of another professional employee or associate. These options entail financial risk and could result in a reluctance of some veterinarians to adopt a retainer style of practice.

About one-half as many clients can be accommodated on a full-retainer program as in a conventional dairy practice emphasizing reproductive work. Fees per client may double under this arrangement. Initial producer apprehension that could lead to early termination of the program is to be expected. If this prospect of early termination causes the veterinarian to retain an excessive workload, the retainer association is likely to fail because of an insufficient amount of time committed to the retainer visits. During the first months of any retainer program great care must be exercised to nurture the veterinary-client relationship. The client is concerned about receiving value for the increased fees, while the veterinarian must learn to adjust to a new practice pace with fewer clients and more intensive involvements. It may be advisable initially to plan a monthly review of the program with each client. This review process promotes communication and permits the modification of the program to the needs of the individual client.

TABLE 1. Herd Performance Report.

DEN DULK DAIRY

DATE: October 30, 1985

Activity	August	September	October	Alarm Level	Same Month Last Year	12 Month Average
1. Beginning Inventory:						
(A) No. Cows in Milk	1037	1040	1035			1037
(B) No. Cows Dry	199	192	191			194
2. Cows Fresh	96	79	43			73
3. Heifers Fresh	10	20	23			18
4. Cows Dried	84	77	75			79
5. Sold/Died	39	34	43			39
6. Ending Inventory:						
(A) No. Cows in Milk	1197	1198	1183			1193
(B) No. Cows Dry	1020	1028	983			1010
	177	170	200			182
Calf Health						
7. Total Born	66	97	61			74.7
8. Na Sulfite Turbidity:						
0	1 (1.5%)	5 (5.2%)	0 (0.0%)	1.0%		2 (2.2%)
1+	2 (3.0%)	7 (7.2%)	0 (0.0%)	5.0%		3 (3.4%)
2+	41 (61.1%)	66 (68.0%)	36 (59.0%)			48 (62.7%)
3+	22 (33.3%)	19 (19.6%)	24 (39.3%)			29 (30.8%)
9. % Morbidity:						
0-2 Weeks	47.0%	31.1%	41.9%			40.0%
2-4 Weeks	0.0%	3.9%	4.8%			2.9%
4-8 Weeks	0.0%	0.5%	0.0%			0.2%
8-16 Weeks	0.0%	0.0%	3.5%			1.2%
> 16 Weeks	0.0%	0.3%	0.8%			0.4%
10. % Mortality: DOA	9 (13.6%)	5 (5.2%)	5 (8.2%)	7.0%		6 (9.0%)
0-4 Weeks	2.7%	1.9%	3.3%	5.0%		2.6%
4-8 Weeks	0.0%	0.0%	0.0%	29.0%		0.0%
> 8 Weeks	0.0%	0.3%	0.0%	1.0%		0.1%
11. No. Heifers Vacc/Mo	54	0	22			25
12. No. Conceived (Heifers)						
13. Avg. Age @ Conception				15 Mo.		
14. Avg. Wt. @ Conception				825		
Adult Health						
15. Milk Fever (No. & %)	3 (0.3%)	0 (0.0%)	2 (0.2%)	10.0%		2 (0.2%)
16. Mastitis (%)	2.5%	2.1%	0.7%	3.0%		1.8%
17. Dystocia (No. & %)	9 (8.2%)	14 (1.1%)	6 (0.5%)	5.0%		10 (3.3%)
18. Retained Placenta (No. & %)	7 (5.5%)	8 (8.7%)	5 (7.6%)	10.0%		7 (7.3%)
19. Lameness (%)	0.5%	0.3%	0.2%	2.0%		0.3%
20. Other Sick (No.)	10	10	9			10
Mastitis Control						
21. TMI						
22. Tank SCC (Avg.)	155,600	102,562	126,000	200,000		126,218
23. SCC (CMT=1,2,3) (%) or SCC 500,000 (%)						
24. Tank Culture						
(A) Strep. Ag.	Pos. 8/22	Neg.	Neg.	+		
(B) Mycoplasma	Pos. 8/1	Pos. 9/20	Neg.	+		
25. Fresh Cow Prev. (SA&AB)	2.4%	1.3%	3.9%			2.5%
26. Dry Cow Prev. (SA&AB)	5.6%	20.9%	2.0%			9.5%
27. CCIR	2.5%	2.0%	0.7%	3.0%		1.7%

TABLE 1. (Continued)

Activity	August	September	October	Alarm Level	Same Month Last Year	12 Month Average
Reproduction						
28. Total 1st Three	59.5%	51.5%	71.8%	70.0%		60.7%
29. % Bred by 90 Days	79.0%	85.9%	83.3%	80.0%		82.7%
30. FSC Rate	22.2%	23.5%	27.0%	25.0%		31.4%
31. Avg. Days Open	111.5	92	126	110.0		109.8
32. No. Confirmed Pregnant	91	104	86	80		93
33. % Pregnant	82.7%	82.5%	78.9%	80.0%		83.4%
34. Avg. DIM	159.7	161.3%	162.6	165.0		161
35. % In Heat In 60 Days	77.1%	74.6%	71.0%	70.0%		74.2%
36. No. Abortions	22	13	4	10		13
37. No. Cows Open 150 Days	101	95	105			100
38. % Open 150 Days	12.0%	11.6%	13.2%	15.0%		12.3
Production						
39. Milking Herd Avg. (Lbs)	64.1	63.3	59.3	55		62.2
40. Fresh Cows:						
(A) Average		72.4	77.2	75		74.8
(B) 95th Percentile		95.5	106.5	95		101.0
41. Fresh Heifers:						
(A) Average		51.8	55.0	50		53.4
(B) 95th Percentile		63.0	81.5	70		72.3
42. % Dry or % DIM	16.1	15.7	16.2	20		16.0
Removal Reasons						
43. Low Production (No.)	5	15	14			11
44. Reproduction (No.)	4	0	2			3
45. Mastitis/Udder (No.)	2	1	0			1
46. Feet/Legs (No.)	0	3	0			1
47. Dairy (No.)	9	20	17			15
48. Other (No.)	0	3	4			2
49. Unknown (No.)	2	2	6			3
50. Down or Dead (No.)	3	2	1			2
Total No. (%)	39 (3.2%)	34 (2.8%)	44 (3.6%)			38 (3.2%)
Nutrition						
51. Daily Feed Cost/Cow (\$)	3.01	2.91	2.86			2.93
52. Milk Blend Price/Cwt (\$)	11.52	11.52	11.50			11.51
53. IOFC/Day (\$)	4.07	4.37	3.14			3.86
54. Feed Cost/Cwt Milk \$ & %	4.69	4.60	5.47			4.92
55. Feed Cost/Income (%)	40.8	40.0	47.6	50.0		42.80

Production Medicine programs will require some charges for consultative services. Retainer services may be provided for all production management areas, with all non-emergency professional services billed on a comprehensive flat fee basis. Alternatively, technical services such as palpation, calthood vaccination and surgery may be billed on a case or hourly basis while consultative services are billed on a retainer basis. "Modules" of consultative services

can be marketed e.g. reproduction, nutrition, calf management, udder health, etc. Individual selection of modules comprehensively addressing one management area is more likely to achieve profit objectives than selection of general activities and parts of programs based on client preferences. It may be desirable to arrange a basic package of consultative services and fees for all clients. A program based on communication and free of extensive legal and

FIGURE 1. Calf Morbidity Rates — Dairy

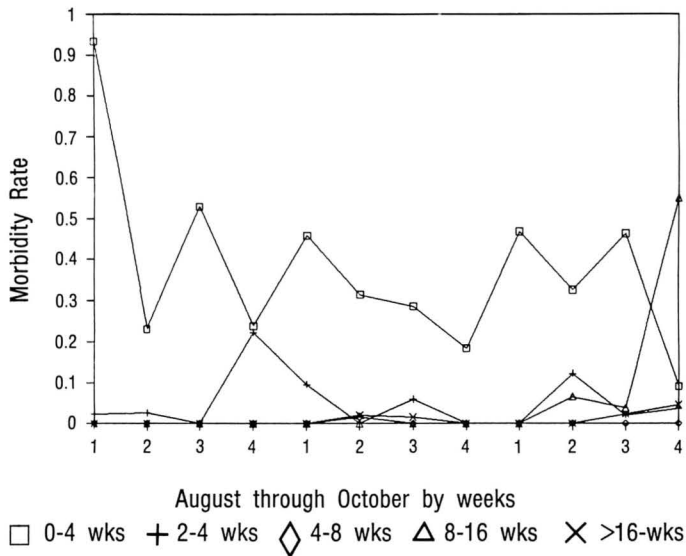


FIGURE 2. Average Somatic Cell Count — VMTRC Clientele

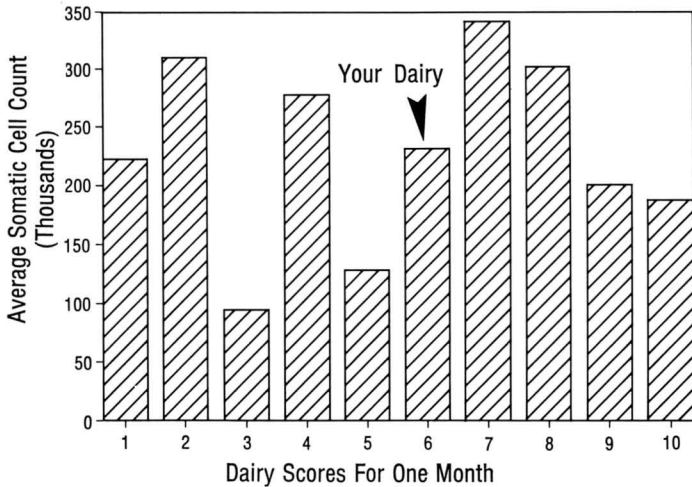


FIGURE 3. Average Body Condition Scores Against Period of Lactation

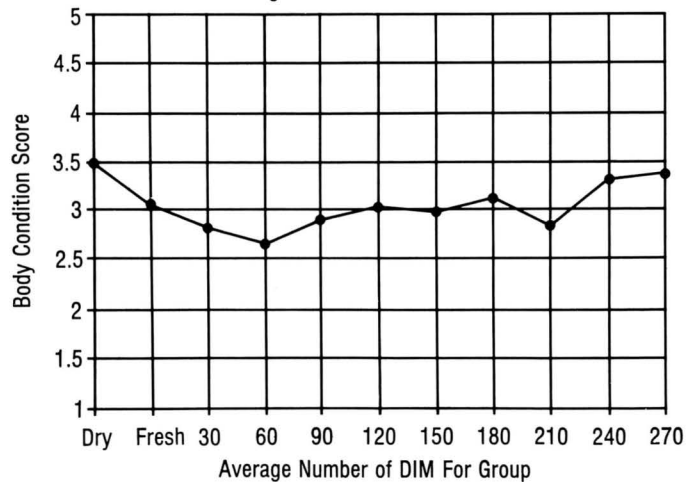


FIGURE 3.

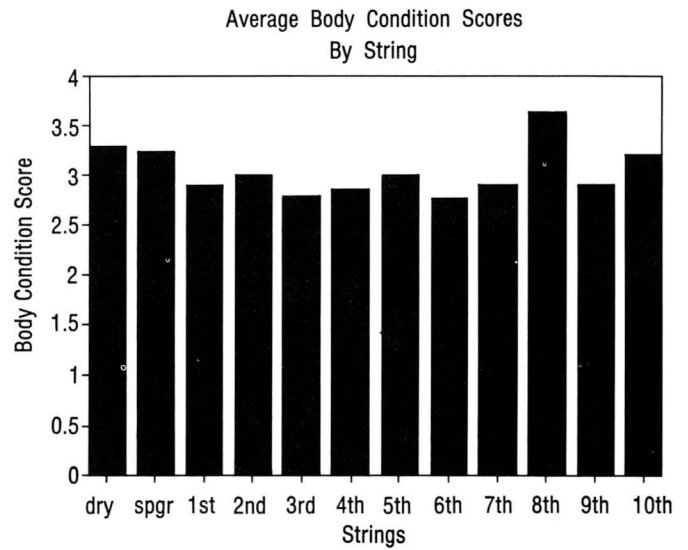


TABLE 2. Herd Annual Review Production and Expenditure Control Program.

Calf and Heifer Replacement Program

1. Estimate heifer raising costs (birth through calving)
 - use worksheet for direct costs
 - calculate indirect costs (health related)
 - compare to local and state average costs
2. Measure herd genetic gain
 - compare 305 ME (cows vs. 2nd vs. FCH)
 - expect + 300 lb/year

Udder Health/Milk Quality Control

1. Calculate annual mastitis losses
2. Comprehensive milking systems/clean-up evaluation
3. Milking/Treatment/Environmental Hygiene Review

Reproductive Management

1. Calculate economic losses due to reproduction
2. Review annual statistics
 - Reproductive Summary Report
 - Periparturient Disease
 - Recovery Evaluations
 - Abortion Rates
3. Vaccination Program Review

Nutrition

1. Summarize herd production levels
2. Annual review of problems and develop strategies to optimize:
 - Dry Matter Intake — seasonal patterns
 - Body Condition Scores
 - Production Diseases (MF, RP, downers, ketosis, etc.)
 - Feed costs/Practices roundtable

General Herd Health/Sick Cow Care

1. Summarize annual incidence by disease and season
2. Evaluate recovery rates by disease and season
3. Evaluate personnel, detection and treatment methods
4. Estimates cost of disease

Personnel Training and Management

1. Featured speaker for owners and managers
2. Recognition night for employees

TABLE 3. Activity Schedule of Regular Visits.

Activity	Frequency		
	2X/Mo.	Mo.	3 Mo. 6 Mo.
Heifer Program:			
Calculate Sire PD's (FCH-hfrs-semen)			×
Sire Selection (MAXBULL)			×
Mortality Data Update	×		
Colostrum Absorption Testing	×		
Review Treatment and Vax Cards	×		
— record disease incidence			
— necropsy when > mortality goals			
Ration Analysis (each group)		×	
Wt/Ht/Body Scores (14 & 24 mo)		×	
Repro. Sched. (to breed sick and ck)		×	
Inspect Purchased Animals		×	
Milk Quality and Udder Health:			
Collect and Review Treatment Log	×		
Collect Clinicals and Tank	×		
Calculate Indices (% < 400,000 TMI)		×	
Collect Review Culling Data		×	
Milking Equipment Check		×	
Culture Purchased Cows	×		
Reproduction:			
Computer Input/Output	×		
Reproductive Statistics		×	
— reproductive performance sum.		×	
— technician concept rate report			×
Review Calving Area Management	×		
— DOA's		×	
— post-partum exams		×	
— periparturient disease, dystocia		×	
Heat Detection Assessment (Cowen)			×
— calculate losses		×	
— milk progesterones			×
Natural Service — Bull Testing			×
Sire Selection (MAXBULL)			×
Nutrition:			
Inventory Feeds and Costs		×	
Feed Bunk Management Review		×	
— space, order, amt's, access, water			
Measure DMI		×	
Review/Recalculate Rations		×	
Log Production Diseases		×	
milk fever			lameness
retained placenta			indigestion
downer			bloat
udder edema			
Body Condition Scoring		×	
Sick Cow Care:			
Review Hospital Treatment Records	×		
Calculate Disease Rates		×	
Mortality & Culling Log		×	
— record pen no.			
— post mortem exam all unknowns			
Disease Management Training			×
Personnel Training and Management:			
AI/Herdsman Update			×
Calf Management Review			×
Milk Refresher Course			×
Feed Formulation and Bunk Management			

contractual obligations may prove the most useful.

Selection of the first clients to approach with a retainer program is important. They should be the clients of longest association and they should have a high degree of confidence in the veterinarian. Furthermore, they should be innovators and aggressive in their industry. If the program succeeds, it will be a result of the mutual efforts of client and veterinarian. A few well-conceived and executed retainer programs can become the models to sell programs to the remainder of the suitable clientele.

Dairy "herd health" programs emphasizing disease prevention are evolving into health and production medicine programs. The adoption of production oriented programs will likely require changes in practice style, schedules and fees. New consultative activities will need to be integrated into practice routines. An essential component of production medicine programs is herd performance evaluation. Herd performance must be evaluated initially to determine need and project benefits. Monthly herd performance reports prompt evaluation, intervention and modification of program components. On-going performance evaluation actually becomes the communication vehicle for the client and consultant.

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